

How to Eat to Keep Planting

Top Ten Tips



for Tree Planters

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Digital Media, Music, and Information Technology, Selkirk College.



You are primed for a highballing kind of season. What can you do to make sure that happens?

1. First, do the pre-season training program available at <http://online.selkirk.bc.ca/treeplanting>. It will help:

- Increase your aerobic power so you can move fast all day:

Planters who followed this program planted 12.5% more trees than untrained planters.

- Strengthen your muscles and tendons to protect against wear and tear:
- Speed up your reflexes to protect your joints:

Planters who used this pre-season training program suffered 40% fewer injuries and illnesses than planters who did not train.

2. Once you get planting, how will you make sure you feel good and plant productively every day? Follow the Top 10 Tips in this booklet...

Eating right can help you plant hard today, and hard again, tomorrow. The information in this package is based on sound principles of sports nutrition. You may not be running a race, but you are putting your body through the same sort of challenge - day after day.

Eating right can help you do more than survive the season. It can help you stay strong and make money. That's what you want, right?

After you read the information in this booklet, check out the Power Eating for Power Planting manual, too. It explains more about:

- The Top Ten: Why they are important and how they work
- Meals for different working conditions
- Delicious, camp-tested recipes
- How to prepare food to make it better fuel for planters

You can download your own copy of Power Eating for Power Planting at:

<http://online.selkirk.bc.ca/treeplanting>

Questions, comments, suggestions?

E-mail Delia at [droberts@selkirk.bc.ca](mailto:droboterts@selkirk.bc.ca)
or visit <http://online.selkirk.bc.ca/treeplanting> and follow the link to the feedback page.



Tip 1. Carbohydrate equals energy

Carbohydrate is the key nutrient for fueling your activity. (Fat and protein are two other sources of calories, more information about them can be found in tips 2 and 3). Tree planters and other active people need to get as much as 70% of their calories from carbohydrates.

Sugars and starches are carbohydrates. Sugars are simple carbs: They're digested and absorbed quickly. Starches, found mainly in whole grains, fruits and vegetables are complex: To use them, your body has to break them down and release the glucose - this is the most basic form of sugar, and the one that is used by your body for energy.

Because simple carbs are absorbed the fastest, they give you quick energy. But they can drop you down as quickly as they pick you up. That's why you may feel tired a couple of hours after a sugary snack. More complex carbs (especially less-processed high-fiber grains, fruits and veggies) are digested more slowly. That gives them staying power.

One way to describe how quickly the sugar from a carbohydrate food enters the bloodstream is to use the Glycemic Index. High Glycemic Index foods (e.g. sugar, honey, dried fruit, crackers and most breads and processed cereals) act fast. Low Glycemic Index foods (e.g. legumes, skim milk, and most fruits and vegetables) enter the bloodstream slowly but surely.



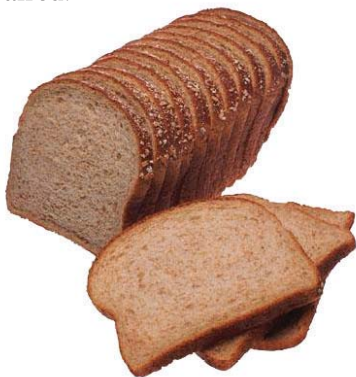
Have a look at the Power Eating for Power Planting manual for a more complete list of foods that fall into high and low Glycemic Index categories. You can print your own copy by visiting

<http://online.selkirk.bc.ca/treeplanting>

If you're going to start planting shortly after you eat, include some high Glycemic Index Foods. But if you have a long delay between eating and planting, choose more low-Glycemic Index foods. They can digest while you are waiting, and will be ready when needed to fuel your planting.

The carbohydrate you eat is intimately related to the way your body uses protein and fat. Without enough carbohydrate it's difficult to build or even repair muscle. Your body also needs carbs to burn fat.

Here's still another reason for eating enough grains, breads, cereals, pasta, fruits, and vegetables:
Carbohydrates are the only fuel your brain and immune system can use. If your diet is too low in carbs, your concentration, coordination, and ability to fight infections will be impaired.



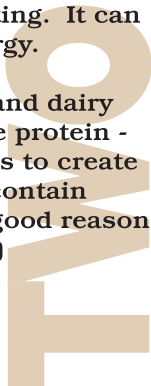
Tip 2. Protein can be powerful

Protein has more important things to do than provide fuel: It's in constant demand for the repair of body tissues, to create fresh enzymes, and build new muscle.

Your protein requirement may be slightly higher than usual when you're planting. Together with good sources of protein, you'll need to eat enough carbohydrate to "spare" the protein for building tissues. Otherwise your body will sacrifice tissue protein to make sugar for your nervous and immune systems. Unfortunately fat can't be converted to sugar, so when you don't eat enough carbohydrate your body has to break down muscle. That's why planters can look so gaunt by the end of the season.

Protein, which is made up of units called amino acids, is more complicated than carbohydrate and takes longer to digest (about 2 hours). When protein is part of a meal or snack, it slows down the digestion of carbohydrate, providing a slow, steady release of fuel. So eating a little protein at each bag-up is a good strategy for planting. It can help keep you from running out of energy.

Protein from meat, fish, poultry, eggs, and dairy products - often referred to as complete protein - has all the amino acids your body needs to create new tissue. (Some of these foods also contain substantial amounts of fat, which is a good reason not to overdo some high-protein foods.)



Protein from tofu, dried beans, lentils, and nuts is also highly useful. These vegetable sources are sometimes said to have incomplete protein because they lack one or more of the essential amino acids. But eaten in combination with each other, vegetable proteins have what it takes to build muscle and enzymes. (Combine beans or tofu with whole grains to get "complete" protein. Don't worry about combining complementary vegetable proteins at the same meals - what you eat over the entire day is all that matters.)

For a nice steady supply of energy all day long try to include a small amount of low-fat protein, such as lean meat, skinless chicken, fish, low-fat milk products, tofu, or cooked dried beans every meal and snack.



Tip 3. Fat is not a four-letter word

Fat is twice as concentrated in calories as carbohydrate and protein - and the human body can store it in unlimited amounts (darn!). But fat is not the villain some people have come to believe. Essential fatty acids are every bit as important as other nutrients. And without fat, you wouldn't be able to absorb vitamins A, D, E, and K.

Fats have the most staying power because they're high in calories and digested very slowly. They also slow down the digestion of the rest of your meal, which can be helpful when you're working hard all day long. But because the release of energy is slow, fat will only fuel slow work. If you want to plant fast, too much fat can make you feel sluggish. Slow digestion also means you have to plan (eat) ahead, fats can't give you fuel until hours after they have been eaten. The trick is to find the right balance of fat, protein, and carbohydrates.

Treat fat like pure gold: Don't squander it in ways you don't even notice and enjoy. Rather, use small amounts to accent your meals and snacks. You can often reduce the fat in a meal without compromising on taste or "mouth feel."

Choose leaner cuts of meat and remove the skin from chicken. Switch from 2% to 1% milk, or from 1% to skim. Cut down on margarine or butter by spreading toast with jam, and sandwiches with mustard. (Compliments to the cook who cuts back on fat while preparing food!)

Back to those **essential fatty acids**: You'll find omega-3 fats in cold-water fish, canola, walnuts, and flax seed. The more common omega-6s are in most vegetable oils. These fats are **critical for the repair of tissue damaged each day during planting.**

This attention to fat may seem a bit picky when you're burning calories like crazy every workday. But you need the right kind of fuel at the right time to plant fast and stay healthy - that won't happen with a steady diet of high-fat foods.



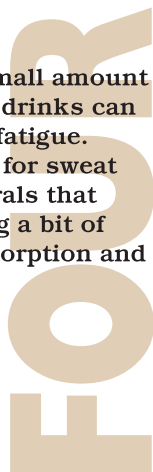
Tip 4. Stay focused with fluids

What you drink, how often, and how much you drink will have an impact on how many trees, and how well you plant each day (it will also affect your risk of heat stroke). **Even mild dehydration can make it difficult to concentrate and can compromise your speed and safety in the block.**

During hard planting, you need about **500 ml (2 cups) of fluids per hour**, best if sipped in small amounts frequently. That adds up to 4 liters in an 8-hour workday. You'll need even more if you sweat heavily, the weather is hot, or you're planting at high elevations.

The fastest way to move liquid from your stomach into your blood is to take it in small amounts. Use a backpack hydration system (put it in your back bag) or carry a water bottle (and use it!) in the block. It only takes a little time to drink, and you'll plant more trees in the end if you can avoid the fatigue brought on by dehydration.

A little carbohydrate together with a small amount of salt and potassium chloride in your drinks can also help with fluid balance and delay fatigue. Although the salt in food can make up for sweat losses of important electrolytes (minerals that regulate internal water balance), having a bit of salt in your drink helps with water absorption and keeps the fluid in your body.



There is also a small chance of diluting your blood too much if you take in a very large volume of plain water quickly, the salt will protect against this. The carbohydrate helps speed up absorption of fluid too, and has the added benefit of providing some energy for planting.

Use a commercial sports drink or make your own. Dilute sweetened orange juice half and half with water and add 0.5 ml (1/8 tsp) salt per litre.

Don't depend on drinks that contain caffeine or alcohol to replace body fluids. Both caffeine and alcohol act as diuretics: They increase the amount of water lost in urine (someone once said, you can't buy beer, you can only rent it!). For every cup of strong coffee or alcoholic beverage, drink some extra water.

To find out whether you're drinking enough, weigh yourself in the morning and again at the end of the day, wearing the same clothes (provided your clothing isn't caked with mud). Each pound of weight lost represents 2 cups of water you need to replace.



Tip 5. Timing is everything

Timing of eating is particularly important for people with strenuous jobs - just as it is for athletes during competition. **When you eat your meals and snacks and what you choose to eat at particular times can make a big difference to your sense of well-being and productivity.**

You'll want to feel comfortable and have energy while planting all day - neither over stuffed nor distracted by hunger pangs. You'll want quick energy when you need it, but staying power, too. And you'll also need to recover body structures and stores so you can go out and plant another day. All these considerations have been taken into account in the meal and snack suggestions in this package. Specific recommendations are made for you in Tip #6, but if you want more information you can find it in the Power Tips for Power Planting manual. Download your own copy from:

<http://online.selkirk.bc.ca/treeplanting>.

A word about making the most of your pre-season fitness training: The body can store only small amounts of carbohydrate as glycogen, in both the liver and in muscles. Since even the leanest body has more fat than glycogen, it's worth your while to train your body to use fat as a fuel more effectively. (For a program designed specifically for planting, check out the tree planters training program at:

<http://online.selkirk.bc.ca/treeplanting>

But no matter how good you get at burning fat, you'll always need to replace stored carbohydrates.

Liver glycogen disappears overnight, which is why your mom always told you to eat your breakfast! And what you eat right after planting will affect your muscle stores of glycogen and your ability to plant the next day (please read on, see Tip #6).

Tip 6. Make your meals work for you

Try to balance each meal with some low-fat protein and complex carbohydrate, and go for as much variety as possible to get all the needed vitamins and nutrients foods can offer. When choosing fats look to fish, canola, flax, olive and nut oils to get important fatty acids.

Breakfast to order:

- With a delay of 3 hours between breakfast and planting, you'll have time to digest higher-fat milk and meat products such as cheese and bacon.
- For a drive of 1.5 - 2.5 hrs, lighten up a little and go for low-fat proteins: French toast with yogurt and fruit will fit the bill.
- If you have 1 - 1.5 hrs, favour complex carbs such as wholegrain cereal plus milk or yogurt. Maybe add 1 egg or some lean meat.
- For less than 1/2 hr, you'll want foods that digest quickly: Juice, toast with jam, cereal plus low-fat milk (this won't last very long though so be sure to pick power snacks to make it 'til lunchtime!).



Munch some lunch:

Okay - you won't have time to kick back for a big meal, and you won't feel great if you try to plant with a really full stomach, so lunch should be a readily digestible, slightly larger power snack (see Tip #7). That means not settling for a pocketful of candy. Choose a sandwich or muffin with cheese, plus fresh fruit. Bonus: Fruit is full of protective antioxidants and hydrating fluids!

After planting:

Immediately after you stop planting, your body will be primed for restoration and repair. **This is a key time to take in mostly carbs and just a bit of protein** - the sooner the better. The enzymes that replenish energy stores are highly active only in the first 1 to 2 hours after exercise stops. So unless you will be eating supper within 1-2 hr of stopping work, be sure to pack an extra lunch (sandwich, fruit, and sweet) for the drive back.

Dinner:

You won't be ravenous at suppertime if you've fueled up all day - and that's a good thing. Now eat what you like and let your body tell you when you've had enough. BUT - if you haven't eaten since planting, pay special attention to carbs (rice, pasta, potatoes, bread). It's critical to replace muscle glycogen (the storage form of carbohydrate) before tomorrow.

Tip 7. Pick Power Snacks

Snacking has a bad rep. That probably comes from the term "snack food" which usually refers to high-calorie concoctions that aren't particularly good for you. But eating small amounts of nourishing foods often is a good way to keep your body functioning smoothly 24/7.

For tree planters, *snacking is simply indispensable*. How else to keep your energy level steady so you can keep working, and avoid the discomfort of feeling either hungry or bloated? Let's face it: Tree-planters need a lot of calories - and it's hard to get them without eating often.

It helps to carry plenty of sugar-spiked fluids (see Tip #4). Pocket treats such as hard candies, jujubes, gummy bears, and licorices are great for quick pick-me-ups. But don't depend entirely on sweet treats, which only temporarily - albeit quickly - boost blood sugar.

Pack some solid nutrition before you leave for work each morning. The more variety, the better:

- Bagels with light cream cheese
- Muffins with ingredients such as berries, banana, and bran
- Kaiser buns, bread, or pita pockets with lean meat, cheese, nut butters, or bean spread
- Tortilla wraps with rice plus chicken, chick peas, or cold cooked beans

- Raw veggies (especially root vegetables): Carrot, parsnip, turnip, squash, cucumber, green or red pepper sticks, chunks of broccoli and cauliflower
- Cold potatoes, rice or pasta
- Lean meat or hard-cooked eggs
- Apples, pears, banana, orange and melon slices
- Nuts or trail mix
- Date squares or granola bars
- Hearty cookies with oatmeal, nuts, and seeds

A brief message from your dentist:

Eating frequently is nutritionally sound, but it's hard on your teeth. After a sweet snack, eat a small chunk of hard cheese or chew a stick of sugar-free gum. And remember to brush and floss whenever you can.



Tip 8. Be choosy about supplements

Vitamins and most minerals are needed in small amounts to spark chemical reactions in the body. Each is like a single match that you can use to light a candle. If you want to light candles, it may be good insurance to carry extra matches, but you won't need a blowtorch to do the job. Think of ordinary multivitamins as a box of matches. *Megadoses* of vitamins and minerals are like a blowtorch - they can do more harm than good.

Daily strenuous exercise will increase your need for some nutrients, but Mother Nature provides them in whole foods. If you eat enough nourishing foods to maintain your weight, you'll likely get all the vitamins and minerals you need.

Iron is a possible exception. People who get a lot of exercise are often iron-deficient, particularly if they don't eat red meat, which contains the most absorbable form of iron. But don't take iron supplements unless you need them - **they can be poisonous**. Ask your physician to check your serum *ferritin* level before the planting season starts. If it's below 20µg/litre, a supplement is in order, but be sure to consult with a dietician, pharmacist or other health professional before taking any iron pills.

Nutraceuticals are products isolated from natural food sources, thought to offer special health or performance benefits. An example is creatine, a substance that the body produces as needed. Some studies have shown that taking creatine as a supplement improves performance in activities of very short duration (such as weight lifting). However, creatine supplements are not of value for endurance activities such as planting.

Other supplements that have attracted the attention of planters include ginseng, whose benefits are uncertain, and ephedra, which has some very serious and unhealthy side effects. Glucosamine may have some benefit for cartilage repair if taken for long periods of time and Echinacea seems to enhance the ability to fight infections when you are first exposed to the pathogen, but only if used sparingly for short periods.

Bottom line? Save your dollars and instead of supplements count on a variety of healthy foods for most of your nutrient needs (a daily multivitamin/mineral pill may help fill some gaps). And ask your doctor to check your iron stores.



Tip 9. Learn to be weight-wise

Regular, strenuous exercise is the best technique for burning fat. But don't use a scale to assess fat loss. Chances are you'll build muscle while tree planting, and muscle is heavier than fat. Know that if your clothes are getting looser, you're losing fat.

If you were lean before you started planting, make sure you eat enough (or at the right time - see Tips #5-7) to keep your weight up. Otherwise, you'll be vulnerable to every cold or flu that passes through camp.

Even if you would be happy to shed a few pounds, it's important to eat wisely. Lose weight fast and your body will do everything in its power to gain it back - and more. Human bodies are programmed for survival: The rate at which a body burns calories will drop if you don't eat enough.

The key weight issue for tree planters usually comes when the season is over. Since planters commonly double their usual daily calorie intake while planting, it's easy to gain weight when they return to a less rigorous lifestyle. Could this happen to you?

You will have gotten used to eating a lot - and it is human nature to continue to eat whatever's on the plate (most of us were trained that way). Take heart. You've become very fit - and fit bodies are good at letting their owners know when they need food and when they've had enough. You just have to practice paying attention (your body may shout when it's hungry, and whisper when it's satisfied).

Tip 10. Focus on Fitness

Planting is hard work. The demands on your body are huge. In a typical 8-hour day, your heart rate will be similar to that of a person walking quickly for about 2 hours. For about 3 hours, your heart will beat as fast as a hiker's. And for another 3 hours, your heart will beat as fast as a jogger's.

As you get fitter, you'll be able to do the same amount of work at a lower heart rate and the work will be easier on your body. There will be less accumulation of waste products, fewer small tears in the muscles, ligaments, and tendons, and less wasting of muscle tissue. Not only that, but the fitter you are, the longer you will be able to work at higher heart rates (and do more work when you're there). **That means planting faster - about 12.5% more trees a day!**

It does take some hard work to get fit, and you have to **put the time in before you get to planting-camp**. Don't plan to wait until you start planting: There just isn't enough recovery time when you have to work hard again the next day. If you are reading this in camp, there isn't a whole lot you can do about getting fit for this season other than focus on recovery (see the Top Ten Tips and Re-focus on recovery). But do look around you and watch the planters that are fit. It will motivate you to get in shape before planting season next year.

If you're reading this right after being hired, visit <http://online.selkirk.bc.ca/treeplanting> and download the training program designed specifically for planting.

It's not the only way to get in shape, but it was designed to help you get in shape faster than a standard program.

Based on the latest in sports science techniques, it's aimed at strengthening the muscles, tendons, and ligaments that are under stress during planting, and training them to work along with your nervous system to protect your joints. Read over the instructions in the training booklet and watch the video.

If you have any questions feel free to contact Delia at droberts@selkirk.ca.



Summary - Re-focus on recovery

To plant fast, stay healthy, and avoid injury give your body time to make repairs and rebuild. The only way to do this is to **get enough rest**. The temptation might be to party, but if you want to make real money you need to get 8 hours minimum every night.

At the end of a workday, stretch and massage tired muscles to help them recover. **If you feel sore, deal with it immediately.**

- Ice the sore area right after planting and another couple of times during the evening. Your first aid attendant is there to help you with this.
- Gently stretch out and massage the sore area frequently during the evening and again during the next day. A few minutes pause for a few days will only lose you a few trees. It can help prevent the injury from getting worse, causing you to lose whole days of planting.
- If icing and stretching doesn't stop the pain, talk to your first aid attendant about seeing a physician or physiotherapist, and/or a couple of days of alternate duty. Again, the sooner you deal with the injury the faster and easier the repair.

Key points about Eating:

To plant fast, stay healthy, and avoid injury it's important to keep your blood sugar levels from getting too low or too high.

To do that:

- Eat a good breakfast that will be digested within 30 min of starting planting
- Eat a small amount at every bag up
- Eat a good-sized snack immediately after planting

Key points about Carbohydrates:

Carbohydrates that are higher in fiber (Low Glycemic Index) take about 1 hour to digest. **Whole-grain breads and cereals and fruits and vegetables are good to eat anytime.**

Higher-sugar Carbohydrates will be absorbed quickly (High Glycemic Index). Great at bag-ups, sweeter carbs should also be eaten right after planting.

Carbohydrate foods give you energy for planting fast, climbing hills, and shunting boxes of trees. They also provide energy for the nervous and immune systems, protecting you from injury and illness.

Key points about Proteins:

Protein takes about 2 hours to digest. **Include a little low-fat protein at every meal or snack.**

Proteins are important because they provide building blocks to repair and make new tissues. They also can be converted to glucose to fuel the nervous and immune cells if you run out of carbohydrate stores and are not taking in enough sugars.

Key points about Fats:

Fat takes about 3 hours to digest. **Include a little fat when you have time to digest it** before working.

The healthiest fats come from fish, canola, flax and olive oils (avoid hydrogenated margarine and limit saturated and trans-fats, found mostly in animal sources and commercial baked goods).

Key points about Water:

It's important to replace the water you lose through sweating every day. **To absorb fluid fast and keep it in your body, drink small amounts often** (a backpack system works well if you keep the bladder in your back bag). Choose a sports drink for the added sugar and salt.

Weigh yourself in the morning and after planting. If your clothes/boots/pocket contents are identical, the weight lost = water loss. One pound = 2 cups water. One kilogram = one liter of water.

Good luck - and have a great season!



DISCLAIMER

All individuals beginning a training program should check with their physician to ensure that there are no underlying health risks. Anyone who undertakes this training program does so entirely at their own risk. Neither the author nor the sponsoring organizations may be held responsible in any way for any injury or illness that may occur during or following the use of this training program. These materials have been placed in the public domain.

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